

REMARKS

The Office action dated March 18, 2008, is acknowledged. Claims 1, 3, 5-7 and 9-13 are pending in the instant application. According to the Office action, each of these claims has been rejected. The claims have been amended as set forth above, without adding new matter, to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Furthermore, Declarations of the inventors have been provided to support Applicant's position. Additionally, actual products samples of the prior art, namely Tiozzo and Heikaus, and the present invention are enclosed herewith to corroborate Applicant's statements. Reconsideration is respectfully requested in light of the following remarks.

Rejection of Claims 1, 3, 5-7 and 9-13 under 35 U.S.C. 103(a)

Claims 1, 3, 5-7 and 9-13 have been rejected as being obvious under 35 U.S.C. 103(a) as being unpatentable over Tiozzo (EP 0909721 A1) in view of Paulett (U.S. 5,935,681).

The Examiner notes that Tiozzo teaches non-perforated strips that may be extruded or laminated onto a stretch film that is perforated in areas not covered by the strips (Fig. 3, para. [0029] and [0033]) and that the width of the holes may be varied at will (para. [0038]). The Examiner argued that Paulett teaches forming a hole with a rim thicker than the thickness of the sheet by melting the film with a heated needle or other

means, so that the rim forms when the melted plastic solidifies (element 26, col. 3, lines 25-40). The Examiner stated it would have been within the ordinary skill of the art to have extended the hole size of Tiozzo up to the edge of the strips in view of the teaching to vary the hole size at will. The Examiner further said it would have been obvious to form a ring with heat around the holes of Tiozzo in order to prevent tearing because of the teachings of Paulett.

The Examiner stated that Paulett teaches forming a hole with a rim thicker than the thickness of the sheet (element 26, col. 3, lines 25-40). However, Paulett does not refer to a "rim," but rather a weld 26. A weld in a plastic stretch film may have a thickness which is lower than the thickness of the film itself or having the same thickness as the thickness of the film itself as supported by the attached Declarations of the inventors. As stated in para. 9 of the Declaration of Harilaos Kavvadias and para. 7 of the Declaration of Damianos Markakis, there is no explicit or inherent disclosure in Paulett of the limitation of Claim 1 that the weld/rim must have a thickness thicker than the thickness of the sheet. No where in Paulett does it disclose that weld/rim must be thicker than the thickness of the sheet. The Examiner cites element 26 and col. 3, lines 25-40 of Paulett as supporting evidence. However, a careful review of this cited disclosure reveals that Paulett does not comment at all on the thickness of the weld. It cannot be determined from Fig. 3 whether the weld 26 has a thickness which is greater, equal to or lower than the thickness of the film itself. If one of ordinary skill in the art observes Figs. 2 and 3 of Paulett, he will get the idea of a formed "weld" around each perforation but will not have any indication about the thickness or the surface regularity of the "weld." Therefore,

Paulett does not expressly or inherently teach the limitation of claim 1 that "each hole is surrounded by a bead having a thickness that exceeds a thickness of the base." Welds need not necessarily add to the thickness of the items being welded, as shown for example in U.S. Patent No. 6,066,216 which limits weld depth, as used in plastic welding as explained in the attached "Plastic Welding" by PolyFab, and for welding profiled plastic film in EP 0620105 (copies of these references are enclosed). Furthermore, the purpose of the weld in Paulett is to connect two sheets of a stretch film. Paulett states in column 3, lines 29-31 that the weld would serve to assist in maintaining layers 10 and 14 in their cohesive bond or cling arrangement. Thus, the main purpose of the weld is the bonding of the two sheet layers. It is from this teaching not obvious that a weld/rim should also be formed on a single sheet, as claimed in the present invention. In a single sheet, there would be no purpose for the weld to hold two layers together.

Furthermore, if one skilled in the art in order to increase tear resistance would exploit the teaching of Paulett to form a weld due to hot-pin perforation and extend the width of the hole (due to Tiozzo's teaching) at will, the person skilled in the art would not extend the hole up to the edge of the reinforcing strip. Someone of ordinary skill in the art would avoid placing the reinforcing strip up to the weld (i.e. the freshly created surface of the weld), which would be expected to create problems in fusing together the strips with the weld. The freshly created surface of the weld when hardened does not have a predefined shape and thickness. Therefore, one of ordinary skill in the art would bring the "rim" of the hole close to the reinforcing strip but not under the strip. Additionally, Tiozzo states in Section (0040)(not 0038) that the holes can be defined at

will. This could refer to the shape of the holes or the size of the holes. There is absolutely no suggestion that Tiozzo would have considered making the holes tangent to the strip – indeed no reason is given for Section (0040) at all to do so.

On the contrary, in the instant invention each hole is surrounded by a bead having a defined thickness that exceeds a thickness of the base (claim 1). Moreover, in the instant invention the strips each reach up to the rows of holes (claim 1), wherein it is of no harm if the strips project a little beyond the edges of the holes, thus covering a small part of the holes (para. [0023]). Additionally, the strips are even, but at least without wrinkles and folds – that is the strips are devoid of wrinkles or folds (claim 1) – and attached to the base by adhesion (claim 5), wherein the strips abut the base evenly and are devoid of wrinkles and curls for enabling the strips to spread the stresses developed in the film material when the film material is stretched to prevent tears from developing and spreading (claims 1 and 13). It is known in the stress analysis field that a hole being under uniaxial tension creates elongational stresses at the equator of the hole, while compressive stresses form at the poles of the hole (If the elongationally stretched hole assumes the shape of an oblong, the line connecting the opposing, furthest apart points is the equator, and the poles are located at the part of the hole that is not stretched, i.e. 90° from the stretched points). The elongational stresses reach a maximum exponentially at the edge of the hole, which is three times the overall applied stress (See, for example, Introduction to Elasticity/Plate with hole in tension, http://en.wikiversity.org/wiki/Introduction_to_Elasticity/Plate_with_hole_in_tension, copy enclosed). The increase in the cross-section at the edge of the hole at its equator

reinforces the hole in a way that is totally different than any other known reinforcement due to an increase in the cross-section of an area close to the hole. Therefore, the instant invention produces a film which withstands unusual greater elongational forces and extremely enhances its tensile strength and tear resistance. As the reinforcing strips in the instant invention are up to the edge, or even over the edge of the adjacent hole, the reinforcing strips fulfill in either case the desired increase in the cross-section at the edge of the hole at its equator. The presence of a bead around each hole, when stretched, having a thickness that exceeds the thickness of the base where the reinforcing strip reaches the edge of the holes, the strip being even (i.e. flat and is without wrinkles or folds), both provides extended adhesion between the strip and the film, and yields a product with unusual behavior regarding mechanical properties – and especially tear resistance. The obtaining of these unexpected features demonstrate that the present invention is not obvious in view of the prior art.

Amended Claim 1 of the present application recites that the strips are generally even, but at least without wrinkles and folds – that is, devoid of wrinkles and folds. Any wrinkling of the reinforcement strip naturally would cause folding, since any wrinkled reinforcement strip would consist of several folded layers of the reinforcement strip upon itself. Support for the foregoing is found in para. [0026], amongst other places. Stated another way, the folding itself is a big wrinkle. The Declarations of the inventors discuss this aspect of the present invention and the risk of folding and wrinkles of the prior art. To support the statement that folding itself is a big wrinkle, Applicant has enclosed samples of the present invention and samples of Tiozzo and Heikau.

Specifically, Heikaus teaches that the reinforcement of the main film can be determined by the number of folds. The film strips are folded preferably twice, and particularly four times, in the longitudinal direction (Heikaus para. [0007]). This folding of the film strips inherently produces a lot of wrinkles in the film as noted by the Declarations of the inventors. Furthermore, the sample of Heikaus shows many wrinkles throughout the reinforcement strips which is caused by the folding. Therefore, the reinforcement strips of Heikaus are not generally even, and are not at least without wrinkles and folds. The sample stretch film of Heikaus clearly shows the wrinkles and folds of the reinforcement strips, especially when compared to the product of the present invention.

Furthermore, Heikaus also teaches that if particularly strong and tear resistant stretch films are required, only one row of holes is provided between the reinforcement strips. A further increase of the strength of the stretch film with continued reliable venting can be achieved by providing holes only between each second pair of reinforcement strips so that the regions between the reinforcement strips are alternately perforated and non-perforated (para. [0017]). Therefore, a person of ordinary skill in the art would vary the hole size of Heikaus close to the edge of the strip but not up to the edge of the strip, even more in view of Paulett (as explained above).

On the contrary and referring specifically to claim 3, the reinforcement of the present invention comes from the strips, which extend to be adjacent to the holes, characterized in that at least one layer of strips are superposed on the base and the superposed strips each are of equal width. Furthermore, with reference to each of the

claims, the reinforcement strips are generally even and without wrinkles or folds as can be seen from the sample of the present invention. In order to be more specific, the reinforcing strips of the present invention are defined as being comprised of generally even strips, which are without any wrinkles and extend up to the edge of the adjacent hole. The strips attached to the base are to particular advantage in that they abut on the base, in essence evenly, but at least without any wrinkles and without any curls (para. [0012]). This results in a large-area contact and a close fit between the base and the strips so that the stresses developing in the film material when it is stretched can even be transferred beyond the boundary surfaces in the form of shear stresses (Id.). As a result, tears are consistently prevented from developing at the edges of the holes, thus permitting the achievement of higher stretching rates (para. [0028]). If they comprised wrinkles or curls, the strips would not be able to absorb stresses from the base film to a relevant extent because, on the contrary, the wrinkles or crimps would be the first to be leveled during stretching of the base film (para. [0012]).

The arguments against the rejection of the instant invention by the Examiner over Heikau et al. (WO 01/60709, US 2005/0123721) in view of Paulett hold similarly as in the case of the rejection over Tiozzo in view of Paulett as stated above.

As can be seen by the sample of Tiozzo, it is very similar to the sample of Heikau, i.e. Tiozzo has reinforcement strips which are not generally even, but rather have folds or wrinkles. Tiozzo does not make any statement or give any hint that the strips are generally even, but without wrinkles and folds. This is because the stretch film

is manufactured similarly to Heikaus. Thus, as the inventors state in their respective Declarations, the limitation of the reinforcement strips being generally even, but at least without wrinkles is not disclosed by Tiozzo, Heikaus or Paulett.

Amended Claim 1 of the present invention refers to a novel and nonobvious film where the width of the reinforcement strips reach up to the row of holes adjacent to the strips, where the strips are generally even, but at least with wrinkles and folds, wherein each hole is surrounded by a bead having a thickness that exceeds the thickness of the base. Moreover, the strips abut the base evenly and are devoid of wrinkles, folds and curls (amended claim 13). Therefore, the subject matter of the present invention as a whole is not obvious to a person of ordinary skill in the art in connection to the prior art and the teachings of Tiozzo, Paulett and Heikaus. Therefore, amended claim 1 and its dependent claims and claim 13 should be allowed since the combination of the prior art does not teach each and every limitation in the presently amended claims.

Conclusion

For the foregoing reasons and absent the material requested above, it is believed that the present application, with the claims in their amended form, is in condition for allowance, and such action is earnestly solicited. The Examiner is invited to call the undersigned if there

are any remaining issues to be discussed which could expedite the prosecution of the present application.

Respectfully submitted,

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Att.

DPH/DS

D. Peter Hochberg Co., L.P.A.
1940 E. 6th St. – 6th Floor
Cleveland, OH 44114
(216) 771-3800

By:



D. Peter Hochberg
Reg. No. 24,603